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Interface architecture for testing in foreign language education

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Abstract

The implications of new learning environments have been far-reaching and pervasive (Plass, 1998), at least in the field of interface design both in traditional computer and mobile devices (Fallahkhair, Pemberton, & Griffiths, 2007). Given the current status of efficient models, educators need the unproven unification of interfaces and working areas, which may facilitate the students' integration within the working areas of computer based language testing (CALL) (Cushion, 2006). Based on previous works on interface design by Fulcher (2003), Chapelle & Douglas (2006) and García Laborda (2007) and interface validation by García Laborda & Magal Royo (2007) and current developments (IATEFL or TOEFL), in this paper we concentrate our efforts on describing the design and implementation as well the design principles of the working area of the computer assisted language testing (CALT) platform called PAUER that has been sponsored by the Spanish Ministry of Education between 2007-2010. As most areas of practice in higher education shift online, the work of learners and teachers increasingly takes place within the domain of similar platforms. The digital learning facilities will certainly follow similar patterns and lay outs, thus this presentation will reflect and be valid for similar projects worldwide. Since this platform is mostly based on visually enhanced learning, this paper analyses and critiques the form of visuality in which the contents are presented. The paper ends up considering issues such as ways of transmitting the information, meanings of icons and visual presentation, and the type of pedagogy that has been used to design PLEVALEX and PAU-ER. (Contains 4 figures)

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1. Introduction: Interface Design and Computer Assisted Language Testing

The implications of new learning environments have been far-reaching and pervasive (Plass, 1998), at least in the field of interface design both in traditional computer and mobile devices (Fallahkhair, Pemberton, & Griffiths, 2007). Thus, today there is a genuine interest in finding design patterns that be universally designed, crossculturally understood by different learners and also supported by different digital devices. These design patterns are to be transferred to most software design in certain areas. That means, students in foreign languages who may need to use online libraries, do multiple choice exercises or interact (or semi-interact) with a computer speaking screen should be able to do it immediately and naturally like it can currently be done in software like Moodle. That means, that

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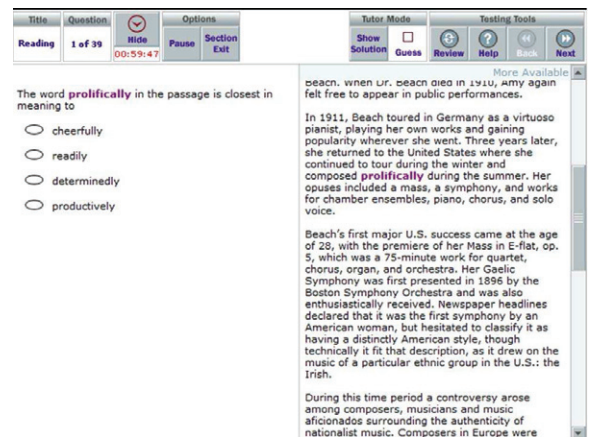
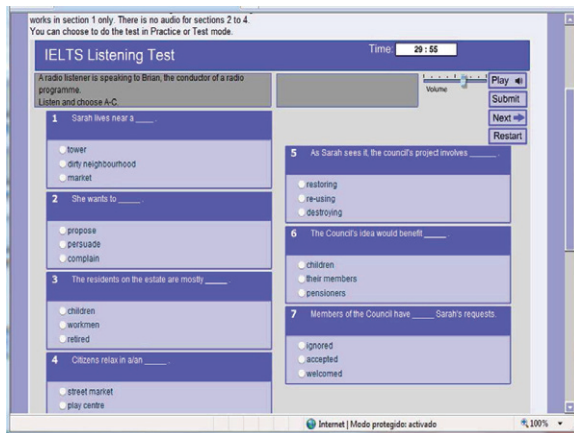
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given the current status of efficient models, educators need to intend the unification of interfaces and working areas, which may facilitate the students' integration within the working areas of computer based language testing (CALL) (Cushion, 2006).

Interface in language testing seems to have attracted limited attention from designers except interface design by Fulcher (2003), Chapelle & Douglas (2006) and Garcia Laborda (2007) and interface validation by Garcia Laborda & Magal Royo (2007). In fact, linguists and educational researchers seem to avoid overlapping with software designers intentionally. For instance, Chapelle, one of the brains behind the TOEFL test, states in one of his latest works that she does not intend to address the computer issues when validating the TOEFL test (Chapelle et al., 2007). In this paper we concentrate our efforts on describing the design and implementation as well the design principles of the working area of the computer assisted language testing (CALT) platform called PAUER that has been sponsored by the Spanish Ministry of Education between 2007-2010 (Research Project HUM2007-66479-C02-01-AR07).

2. Interface Presentation

Although interface design is supposed to have a major importance in high stakes testing (that is, tests that can have a great influence in the testee's life), there is not a single trend in the type of task presentation. On one hand, the holistic task design allows the test takers to see all the possible items related to the same task (figure 1). On the other, the analytic design that only permits to see one item at a time (figure 2). The first, is mostly used when the test administrators let the students revise their production, the second when the administrators consider that students should not be allowed to revise their production. For example, TOEFL's extrapolation of a test score considers that students in real life will have to do one task at the time with no easy way to revise their production. A good example would be when students give a presentation in class (Chapelle et al., 2007).

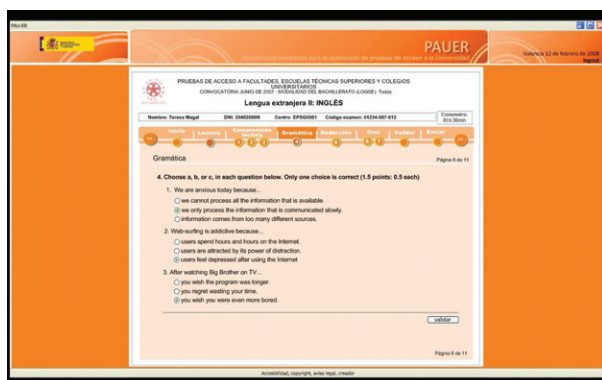


Diagrams 1 and 2: Modules of Listening comprehension (IELTS) and Reading (Kaplan's training for TOEFL)

As it can be observed, interfaces are very simple, colorless, and just indicate the basic operations that can be done in each step. These features have been addressed by Fulcher (2003) and were redefined and improved by Chapelle and Douglas (2006). In Spain, recently the Ministry of Education has begun to study the possibility to test their students after high school graduation as a means in substitution of the traditional national (although administered regionally) University Entrance Examination through computers. In this sense it is necessary to observe the process and architecture of the computer platform.

3. Design Considerations in the PAU-ER Project

In 2004, the Polytechnic University of Valencia designed a prototype that was tested from 2005 to 2007 with excellent results. The interfaces included multiple choice, writing and speaking. The evolution, PAU-ER, has benefitted from the web 2.0 advances.



Diagrams 3 and 4: Multiple choice section (PAU-ER project) and Writing section (PLEVALEX platform)

Apparently, the new project includes the following features:

Navigation: From the PLEVALEX, buttons have been simplified and color eliminated. In the previous version, there could be a confusion between the red and green colors. Fonts have been clearly marked using bold fountain. The exam has also been automatized completely, and although students have lost certain flexibility, they now do not need to navigate in excess. Besides, this mode permits to integrate a variety of tasks linking them one another in ways that had not been done before. Navigation is lineal.

Page Layout & Toolbars and controls: The image has been centered and the written areas clearly marked. Scrolling has also been avoided. Thus, if students want to move they need to go from one screen to another. Although more complex than having too many items in the screen (figure 1), the students may feel that there is an evolution and directional mode that will be given to the meaning of the new tasks. In this way, students can focus in what they are doing and just focus in the center of the interface (with the exception of the timing device).

Text: Clear and centered. It facilitates the student's reading. The size allowed to include a combination of 3 items per interface which is a solution in between the IELTS and TOEFL presentation.

Text color: Colors have been simplified. The framework now correlates color and type of tasks and a variety of colors (as compared to PLEVALEX) avoided.

Icons and graphics: As mentioned, icons have been limited even more in the new prototype. Graphics have been limited to the heading, a timer, and the process buttons.

Multimedia: It will follow the same structure as in the PLEVALEX platform and many other testing platforms.

4. Discussion and Conclusions

This study was designed to show the implementation patterns of computer based language platforms, more specifically, to observe the changes that the PLEVALEX and PAU-ER platforms have gone through in comparison to others such as IELTS or TOEFL. The changes after the evolution of the PLEVALEX project show a great simplification in the interface design by limiting add on's and ornaments. The changes (as observable in figures 3 and 4) illustrate the subtle improvements between both.

In contrast to the traditional pedagogy or testing, arguments have presented that computer mediated language testing can be biased by technology. Little have done the high stakes test administrators to support or deny this point. Thus, as suggested by García Laborda (in press), it is necessary to study if computer tests or interface design can create (or not) differences among testees due to cultural mental patterns or technology use (also Manalo & Wolfe, 2000; Taylor et al., 2000). That means that independently from their origin or computer literacy students facing a computer based language test should have similar possibilities to their colleagues who may be advantaged in this sense. It seem refutable Chapelle et al.'s (2007) perspective that students should adapt to the main streamline of the test use. In the end, it is just a question of whether a test should measure the student's indicators of language learning or the applicability of this knowledge to real life as proposed by Kane et al. (1999). In the first case, students should place special interest in developing the students' language and provide them with enough opportunity to interact with the platform or training modules. In the second, since contextual and use knowledge will certainly need to implement the linguistic competence, strategic learning will certainly overtake or be even more significant than language knowledge. However, strategic competence in the test has proved not to be the best indicator in prospective performance in college (which is the intended context that leads the TOEFL validation argument) (Nisbet et al., 2005).

In conclusion, the research team of the PAU-ER project claims that, at least in their context, language should prevail and computers should only facilitate the student's performance, the institution's delivery and, overall, facilitate the testees' rating and achievement. As a consequence, further studies should address the effect of computer integration in the students' production, the teachers involvement in changing their teaching style and whether a computer based test may facilitate the whole assessment process. In this sense, the PAU-ER project is only one more approach to a more dramatic and tentative change in the coming years.

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